SEQUENCE LISTING

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<110>   Axxima Pharmaceuticals AG
        Schubart, Daniel
        Habenberger, Peter
        Stein-Gerlach, Matthias
        Bevec, Dorian

<120>   Cellular Kinases Involved in Cytomegalovirus Infection and their
        Inhibition

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<140>   09/981,397
<141>   2001-10-16

<150>   60/240,750
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65   70   75   80

Val Ile Ile Glu Glu Gly Lys Tyr Ser Leu Val Met Glu Tyr Met Glu
                85   90   95

Lys Gly Asn Leu Met His Val Leu Lys Ala Glu Met Ser Thr Pro Leu
            100   105   110

Ser Val Lys Gly Arg Ile Ile Leu Glu Ile Ile Glu Gly Met Cys Tyr
            115   120   125

Leu His Gly Lys Gly Val Ile His Lys Asp Leu Lys Pro Glu Asn Ile
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Leu Val Asp Asn Asp Phe His Ile Lys Ile Ala Asp Leu Gly Leu Ala
145   150   155   160

Ser Phe Lys Met Trp Ser Lys Leu Asn Asn Glu Glu His Asn Glu Leu
                165   170   175

Arg Glu Val Asp Gly Thr Ala Lys Lys Asn Gly Gly Thr Leu Tyr Tyr
            180   185   190

Met Ala Pro Glu His Leu Asn Asp Val Asn Ala Lys Pro Thr Glu Lys
            195   200   205

Ser Asp Val Tyr Ser Phe Ala Val Val Leu Trp Ala Ile Phe Ala Asn
            210   215   220

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Lys Glu Pro Tyr Glu Asn Ala Ile Cys Glu Gln Gln Leu Ile Met Cys
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         275   280   285

Tyr Leu Ser Gln Leu Glu Glu Ser Val Glu Glu Asp Val Lys Ser Leu
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Leu Gln Leu Asp Cys Val Ala Val Pro Ser Ser Arg Ser Asn Ser Ala
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Pro Val Glu Glu Ser Trp Phe Ala Pro Ser Leu Glu His Pro Gln Glu
         355   360   365

Glu Asn Glu Pro Ser Leu Gln Ser Lys Leu Gln Asp Glu Ala Asn Tyr
    370   375   380

His Leu Tyr Gly Ser Arg Met Asp Arg Gln Thr Lys Gln Gln Pro Arg
385   390   395   400

Gln Asn Val Ala Tyr Asn Arg Glu Glu Glu Arg Arg Arg Arg Val Ser
             405   410   415

His Asp Pro Phe Ala Gln Gln Arg Pro Tyr Glu Asn Phe Gln Asn Thr
         420   425   430

Glu Gly Lys Gly Thr Val Tyr Ser Ser Ala Ala Ser His Gly Asn Ala
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Val His Gln Pro Ser Gly Leu Thr Ser Gln Pro Gln Val Leu Tyr Gln
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Pro Val Phe Cys Gly Lys Trp Glu Ile Leu Asn Asp Val Ile Thr Lys
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Gly Thr Ala Lys Glu Gly Ser Glu Ala Gly Pro Ala Ala Ile Ser Ile
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15

Ile Ala Gln Ala Glu Cys Glu Asn Ser Gln Glu Phe Ser Pro Thr Phe
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Ser Glu Arg Ile Phe Ile Ala Gly Ser Lys Gln Tyr Ser Gln Ser Glu
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Ser Leu Asp Gln Ile Pro Asn Asn Val Ala His Ala Thr Glu Gly Lys
            115   120   125

Met Ala Arg Val Cys Trp Lys Gly Lys Arg Arg Ser Lys Ala Arg Lys
    130   135   140

Lys Arg Lys Lys Lys Ser Ser Lys Ser Leu Ala His Ala Gly Val Ala
145   150   155   160

Leu Ala Lys Pro Leu Pro Arg Thr Pro Glu Gln Glu Ser Cys Thr Ile
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Pro Val Gln Glu Asp Glu Ser Pro Leu Gly Ala Pro Tyr Val Arg Asn
            180   185   190

Thr Pro Gln Phe Thr Lys Pro Leu Lys Glu Pro Gly Leu Gly Gln Leu
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Cys Phe Lys Gln Leu Gly Glu Gly Leu Arg Pro Ala Leu Pro Arg Ser
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Glu Leu His Lys Leu Ile Ser Pro Leu Gln Cys Leu Asn His Val Trp
225   230   235   240

Lys Leu His His Pro Gln Asp Gly Gly Pro Leu Pro Leu Pro Thr His
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Pro Phe Pro Tyr Ser Arg Leu Pro His Pro Phe Pro Phe His Pro Leu
            260   265   270

Gln Pro Trp Lys Pro His Pro Leu Glu Ser Phe Leu Gly Lys Leu Ala
            275   280   285

Cys Val Asp Ser Gln Lys Pro Leu Pro Asp Pro His Leu Ser Lys Leu
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Ala Cys Val Asp Ser Pro Lys Pro Leu Pro Gly Pro His Leu Glu Pro
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16

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     Lys Leu Lys Pro Val Asp Tyr Glu Tyr Arg Glu Glu Val His Trp Ala
     385                 390             395                 400
20
     Thr His Gln Leu Arg Leu Gly Arg Gly Ser Phe Gly Glu Val His Arg
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25
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30   Leu Glu Val Phe Arg Ala Glu Glu Leu Met Ala Cys Ala Gly Leu Thr
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     Val Asn Ile Phe Met Glu Leu Leu Glu Gly Gly Ser Leu Gly Gln Leu
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     Val Lys Glu Gln Gly Cys Leu Pro Glu Asp Arg Ala Leu Tyr Tyr Leu
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45
     Gly Gln Ala Leu Glu Gly Leu Glu Tyr Leu His Ser Arg Arg Ile Leu
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50   His Gly Asp Val Lys Ala Asp Asn Val Leu Leu Ser Ser Asp Gly Ser
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     His Ala Ala Leu Cys Asp Phe Gly His Ala Val Cys Leu Gln Pro Asp
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     Gly Leu Gly Lys Ser Leu Leu Thr Gly Asp Tyr Ile Pro Gly Thr Glu
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60
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17

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 10     Cys His Pro Trp Thr Gln Phe Phe Arg Gly Pro Leu Cys Leu Lys Ile
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        Ala Ser Glu Pro Pro Pro Val Arg Glu Ile Pro Pro Ser Cys Ala Pro
 15         610             615             620

        Leu Thr Ala Gln Ala Ile Gln Glu Gly Leu Arg Lys Glu Pro Ile His
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 20
        Arg Val Ser Ala Ala Glu Leu Gly Gly Lys Val Asn Arg Ala Leu Gln
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 25
        Gln Val Gly Gly Leu Lys Ser Pro Trp Arg Gly Glu Tyr Lys Glu Pro
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 30     Arg His Pro Pro Pro Asn Gln Ala Asn Tyr His Gln Thr Leu His Ala
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 35         690             695             700

        Glu Thr Thr Gly Arg Ala Pro Lys Leu Gln Pro Pro Leu Pro Pro Glu
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        Pro Pro Glu Pro Asn Lys Ser Pro Pro Leu Thr Leu Ser Lys Glu Glu
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        Ser Gly Met Trp Glu Pro Leu Pro Leu Ser Ser Leu Glu Pro Ala Pro
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        Glu Leu Gln Gln Leu Glu Ile Glu Leu Phe Leu Asn Ser Leu Ser Gln
 55         770             775             780

        Pro Phe Ser Leu Glu Glu Gln Glu Gln Ile Leu Ser Cys Leu Ser Ile
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18

Asp Ser Leu Ser Leu Ser Asp Asp Ser Glu Lys Asn Pro Ser Lys Ala
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Ser Gln Ser Ser Arg Asp Thr Leu Ser Ser Gly Val His Ser Trp Ser
            820   825   830

Ser Gln Ala Glu Ala Arg Ser Ser Ser Trp Asn Met Val Leu Ala Arg
            835   840   845

Gly Arg Pro Thr Asp Thr Pro Ser Tyr Phe Asn Gly Val Lys Val Gln
            850   855   860

Ile Gln Ser Leu Asn Gly Glu His Leu His Ile Arg Glu Phe His Arg
865   870   875   880

Val Lys Val Gly Asp Ile Ala Thr Gly Ile Ser Ser Gln Ile Pro Ala
            885   890   895

Ala Ala Phe Ser Leu Val Thr Lys Asp Gly Gln Pro Val Arg Tyr Asp
            900   905   910

Met Glu Val Pro Asp Ser Gly Ile Asp Leu Gln Cys Thr Leu Ala Pro
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Asp Gly Ser Phe Ala Trp Ser Trp Arg Val Lys His Gly Gln Leu Glu
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Asn Arg Pro
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Asp Asp Leu Val Thr Ile Ser Glu Leu Gly Arg Gly Ala Tyr Gly Val
        35   40   45

Val Glu Lys Val Arg His Ala Gln Ser Gly Thr Ile Met Ala Val Lys
    50   55   60

Arg Ile Arg Ala Thr Val Asn Ser Gln Glu Gln Lys Arg Leu Leu Met
65   70   75   80

Asp Leu Asp Ile Asn Met Arg Thr Val Asp Cys Phe Tyr Thr Val Thr
            85   90   95

Phe Tyr Gly Ala Leu Phe Arg Glu Gly Asp Val Trp Ile Cys Met Glu
            100   105   110

Leu Met Asp Thr Ser Leu Asp Lys Phe Tyr Arg Lys Val Leu Asp Lys
        115   120   125

Asn Met Thr Ile Pro Glu Asp Ile Leu Gly Glu Ile Ala Val Ser Ile
    130   135   140

Val Arg Ala Leu Glu His Leu His Ser Lys Leu Ser Val Ile His Arg
145   150   155   160

Asp Val Lys Pro Ser Asn Val Leu Ile Asn Lys Glu Gly His Val Lys
            165   170   175

Met Cys Asp Phe Gly Ile Ser Gly Tyr Leu Val Asp Ser Val Ala Lys
            180   185   190

Thr Met Asp Ala Gly Cys Lys Pro Tyr Met Ala Pro Glu Arg Ile Asn
        195   200   205

Pro Glu Leu Asn Gln Lys Gly Tyr Asn Val Lys Ser Asp Val Trp Ser
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Leu Gly Ile Thr Met Ile Glu Met Ala Ile Leu Arg Phe Pro Tyr Glu

21

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     Ser Pro Gln Leu Pro Ala Asp Arg Phe Ser Pro Glu Phe Val Asp Phe
                    260   265   270
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     Thr Ala Gln Cys Leu Arg Lys Asn Pro Ala Glu Arg Met Ser Tyr Leu
                275   280   285

15
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22

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23

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```

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Met Ser Val Asn Ser Glu Lys Ser Ser Ser Ser Glu Arg Pro Glu Pro
1               5                   10                  15


Gln Gln Lys Ala Pro Leu Val Pro Pro Pro Pro Pro Pro Pro Pro Pro
            20                  25                  30


Pro Pro Pro Pro Leu Pro Asp Pro Thr Pro Pro Glu Pro Glu Glu Glu
        35                  40                  45


Ile Leu Gly Ser Asp Asp Glu Glu Gln Glu Asp Pro Ala Asp Tyr Cys
    50                  55                  60


Lys Gly Gly Tyr His Pro Val Lys Ile Gly Asp Leu Phe Asn Gly Arg
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24

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     Tyr His Val Ile Arg Lys Leu Gly Trp Gly His Phe Ser Thr Val Trp
 5                   85                  90                  95

     Leu Cys Trp Asp Met Gln Gly Lys Arg Phe Val Ala Met Lys Val Val
10                  100                 105                 110

     Lys Ser Ala Gln His Tyr Thr Glu Thr Ala Leu Asp Glu Ile Lys Leu
                     115                 120                 125
15
     Leu Lys Cys Val Arg Glu Ser Asp Pro Ser Asp Pro Asn Lys Asp Met
                     130                 135                 140

20   Val Val Gln Leu Ile Asp Asp Phe Lys Ile Ser Gly Met Asn Gly Ile
     145                 150                 155                 160

     His Val Cys Met Val Phe Glu Val Leu Gly His His Leu Leu Lys Trp
25                       165                 170                 175

     Ile Ile Lys Ser Asn Tyr Gln Gly Leu Pro Val Arg Cys Val Lys Ser
                     180                 185                 190
30
     Ile Ile Arg Gln Val Leu Gln Gly Leu Asp Tyr Leu His Ser Lys Cys
                     195                 200                 205
35
     Lys Ile Ile His Thr Asp Ile Lys Pro Glu Asn Ile Leu Met Cys Val
                     210                 215                 220

40   Asp Asp Ala Tyr Val Arg Arg Met Ala Ala Glu Pro Glu Trp Gln Lys
     225                 230                 235                 240

     Ala Gly Ala Pro Pro Pro Ser Gly Ser Ala Val Ser Thr Ala Pro Gln
45                   245                 250                 255

     Gln Lys Pro Ile Gly Lys Ile Ser Lys Asn Lys Lys Lys Lys Leu Lys
                     260                 265                 270
50
     Lys Lys Gln Lys Arg Gln Ala Glu Leu Leu Glu Lys Arg Leu Gln Glu
                     275                 280                 285
55
     Ile Glu Glu Leu Glu Arg Glu Ala Glu Arg Lys Ile Ile Glu Glu Asn
                     290                 295                 300

60   Ile Thr Ser Ala Ala Pro Ser Asn Asp Gln Asp Gly Glu Tyr Cys Pro
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25

5   Glu Val Lys Leu Lys Thr Thr Gly Leu Glu Glu Ala Ala Glu Ala Glu
                325   330   335

     Thr Ala Lys Asp Asn Gly Glu Ala Glu Asp Gln Glu Glu Lys Glu Asp
10   340   345   350

     Ala Glu Lys Glu Asn Ile Glu Lys Asp Glu Asp Asp Val Asp Gln Glu
            355   360   365

15   Leu Ala Asn Ile Asp Pro Thr Trp Ile Glu Ser Pro Lys Thr Asn Gly
            370   375   380

20   His Ile Glu Asn Gly Pro Phe Ser Leu Glu Gln Gln Leu Asp Asp Glu
    385   390   395   400

     Asp Asp Asp Glu Glu Asp Cys Pro Asn Pro Glu Glu Tyr Asn Leu Asp
25   405   410   415

     Glu Pro Asn Ala Glu Ser Asp Tyr Thr Tyr Ser Ser Ser Tyr Glu Gln
            420   425   430
30

     Phe Asn Gly Glu Leu Pro Asn Gly Arg His Lys Ile Pro Glu Ser Gln
            435   440   445

35
     Phe Pro Glu Phe Ser Thr Ser Leu Phe Ser Gly Ser Leu Glu Pro Val
            450   455   460

40   Ala Cys Gly Ser Val Leu Ser Glu Gly Ser Pro Leu Thr Glu Gln Glu
    465   470   475   480

     Glu Ser Ser Pro Ser His Asp Arg Ser Arg Thr Val Ser Ala Ser Ser
45   485   490   495

     Thr Gly Asp Leu Pro Lys Ala Lys Thr Arg Ala Ala Asp Leu Leu Val
            500   505   510
50

     Asn Pro Leu Asp Pro Arg Asn Arg Asp Lys Ile Arg Val Lys Ile Ala
            515   520   525

55
     Asp Leu Gly Asn Ala Cys Trp Val His Lys His Phe Thr Glu Asp Ile
            530   535   540

60   Gln Thr Arg Gln Tyr Arg Ser Ile Glu Val Leu Ile Gly Ala Gly Tyr

26

5   Ser Thr Pro Ala Asp Ile Trp Ser Thr Ala Cys Met Ala Phe Glu Leu
             565   570   575

    Ala Thr Gly Asp Tyr Leu Phe Glu Pro His Ser Gly Glu Asp Tyr Ser
10   580   585   590

    Arg Asp Glu Asp His Ile Ala His Ile Ile Glu Leu Leu Gly Ser Ile
        595   600   605
15

    Pro Arg His Phe Ala Leu Ser Gly Lys Tyr Ser Arg Glu Phe Phe Asn
      610   615   620

20   Arg Arg Gly Glu Leu Arg His Ile Thr Lys Leu Lys Pro Trp Ser Leu
    625   630   635   640

    Phe Asp Val Leu Val Glu Lys Tyr Gly Trp Pro His Glu Asp Ala Ala
25   645   650   655

    Gln Phe Thr Asp Phe Leu Ile Pro Met Leu Glu Met Val Pro Glu Lys
          660   665   670
30

    Arg Ala Ser Ala Gly Glu Cys Arg His Pro Trp Leu Asn Ser
        675   680   685

35